

Observations of Comets and Planets made with the 15-inch Duncricht Refractor and Wire Micrometer at the Royal Observatory, Blackford Hill, Edinburgh. By Dr. J. Halm.

(Communicated by the Astronomer Royal for Scotland.)

Comet 1896 IV.										Comet 1897 (Perrine, 1896 Nov. 2).																				
M.T. Edinburgh.		$\Delta\alpha$.		$\Delta\delta$.		No. of Comp.		α App.		Log $p\Delta$.		δ App.		Log $p\Delta$.		Reduction to App. Pl.		No. of Comp. Star.												
1896.	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s									
Sept. 14	10	17	5	-1	14	72	-	2	0	7	21, 7	14	44	33	90	9	729	+53	54	18	8	0	741	+0	86	-	2	6	1	
Comet 1897 (Perrine, 1896 Nov. 2).																														
Nov. 4	12	6	1	-1	29	96	-	1	53	9	9, 3	20	18	30	95	9	549	+23	41	23	9	0	850	+2	30	+19	3	2	2	
5	9	22	32	-1	44	36	+	3	59	4	9, 3	20	17	0	91	9	502	+22	58	14	4	0	764	+2	30	+18	9	3	3	
8	6	10	44	-0	39	51	-	5	16	7	21, 7	20	12	35	39	9	039	+20	42	18	5	0	713	+2	29	+17	6	4	4	
8	6	31	32	-0	16	90	+	3	42	2	18, 6	20	12	33	81	9	143	+20	41	39	7	0	718	+2	29	+17	5	5	5	
13	7	46	54	-0	40	91	+	6	52	4	24, 8	20	6	9	29	9	414	+16	57	42	3	0	780	+2	29	+15	4	6	6	
16	8	2	10	+0	37	45	-	4	25	1	24, 8	20	3	1	91	9	455	+14	53	50	0	0	802	+2	29	+14	2	7	7	
16	9	3	9	-1	18	18	-	9	25	4	12, 4	20	2	59	77	9	512	+14	52	17	6	0	823	+2	29	+14	4	8	8	
18	5	36	8	+0	38	93	-	4	14	4	30, 10	20	1	17	80	9	106	+13	39	19	0	0	778	+2	29	+13	5	9	9	
29	5	38	35	+0	35	90	+	3	17	1	24, 8	19	54	11	32	9	285	+7	17	32	7	0	827	+2	34	+9	8	10	10	
29	5	59	32	-1	0	49	+	1	59	0	15, 5	19	54	10		9	336	+7	17			0	830	+2	35	+10	0	11	11	
30	5	36	44	-1	12	49	+	7	0	9	18, 6	19	53	44	24	9	290	+6	46	40	0	0	831	+2	36	+9	7	12	12	
Dec. 11	6	29	21	-0	19	61	-	5	14	2	24, 8	19	50	20	92	9	461	+1	40	49	7	0	858	+2	43	+6	9	13	13	
13	5	23	12	+1	17	92	-	3	5	2	24, 8	19	49	59	68	9	378	+0	52	31	8	0	860	+2	45	+6	4	14	14	
23	5	19	14	+0	43	51	+	3	26	9	15, 5	19	48	51	10	9	436	-	2	55	29	9	0	871	+2	56	+4	6	15	15
23	5	33	11	-1	16	92	+	4	19	6	15, 5	19	48	51	20	9	453	-	2	55	37	2	0	870	+2	57	+4	9	16	16

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Comet 1896 (Perrine, Dec. 8).

1896. Dec. 11	M.T. Edinburgh.			No. of Comp.			α App.			Log pΔ.	δ App.			Log pΔ.	Reduction to App. Pl.			No. of Comp. Star.
	h	m	s	Δα.	Δδ.	"	h	m	s		°	'	"		s	"	"	
	5	45	4	-2 42'65	+ 3 35'5		1	9	32'54	9'223 ⁿ	+ 5	24	14'4	0'836	+ 4'19	+ 27'2		17
	8	41	43	-1 51'45	+ 0 32'7		1	10	23'75	8'902	+ 5	21	11'6	0'834	+ 4'20	+ 27'2		17
	7	59	11	+ 1 11'35	+ 4 14'1		2	23	53'69	8'396 ⁿ	+ 1	34	18'5	0'854	+ 4'50	+ 23'5		18
	6	35	14	+ 1 56'53	+ 7 10'1		2	29	38'42	9'159 ⁿ	+ 1	19	53'0	0'857	+ 4'50	+ 23'1		19
1894 A.Y.																		
Sept. 15	10	34	10	+ 1 45'79	+ 5 11'7		20	26	46'28	9'183	- 6	45	46'2	0'890	+ 3'83	+ 10'9		20
(106) Dione.																		
Sept. 17	11	14	35	+ 1 2'89	- 10 56'8		23	53	33'67	8'854 ⁿ	- 8	7	45'2	0'898	+ 4'17	+ 26'4		21
29	9	57	24	+ 1 6'39	- 8 18'4		23	44	35'76	9'007 ⁿ	- 8	51	20'2	0'900	+ 4'24	+ 25'7		22
Oct. 5	10	2	36	+ 1 2'98	- 4 56'1		23	40	28'20	8'713 ⁿ	- 9	6	56'7	0'902	+ 4'25	+ 25'3		23
(92) Undina.																		
Sept. 17	12	4	3	+ 0 43'00	+ 3 6'6		0	59	24'22	8'977 ⁿ	- 9	37	38'7	0'903	+ 4'06	+ 28'9		24
Oct. 12	10	6	22	- 1 7'14	- 5 47'2		0	41	32'86	8'992 ⁿ	- 11	33	41'9	0'908	+ 4'31	+ 27'4		25
21	9	53	11	+ 1 1'92	- 8 45'5		0	35	35'33	8'758 ⁿ	- 11	51	21'4	0'911	+ 4'33	+ 26'3		26
22	11	42	25	- 0 39'82	+ 3 22'7		0	34	56'34	9'036	- 11	52	30'8	0'909	+ 4'33	+ 26'2		27
24	10	28	50	- 1 47'68	+ 1 58'8		0	33	48'48	8'182	- 11	53	54'8	0'912	+ 4'33	+ 26'1		27

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(195) *Eurykleia*.

1896.	M.T. Edinburgh.	O — *			No of Comp.	a App			Log pΔ.	δ App.			Log pΔ	Reduction to App Pl.			No. of Comp. Star.
		h	m	s		Δα.	Δδ.	Δs		h	m	s		Δα	Δδ	Δs	
Nov. 2	11 51 19	—0	58	15	15, 5	8	0	2	8'429 ^m	24	0	32	0'667	+4	87	+25	37
3	12 18 48	—1	56	26	12, 4	6	20	9	8'386	23	58	53	0'668	+4	88	+25	37
4	9 35 14	—2	47	20	3, 1	4	49	7	9'328 ^m	23	57	22	0'702	+4	89	+25	37
13	9 6 54	—3	39	80	12, 4	5	33	3	9'282 ^m	23	37	52	0'699	+4	96	+26	38

(82) *Alkmene*.

Nov. 13	9 53 47	—2	49	61	12, 4	8	8	2	8'992 ^m	16	39	29	0'751	+4	76	+27	39
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(133) *Cyrene*.

Dec. 8	12 23 6	+0	12	52	12, 6	10	7	8	8'474 ^m	31	45	58	0'555	+6	07	+6	40
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(8) *Flora*.

Nov. 29	10 23 38	+2	54	70	12, 4	4	43	40	9'171 ^m	14	15	49	0'776	+5	15	+16	41
Dec. 8	11 17 7	—1	59	83	15, 5	1	34	2	7'695 ^m	14	35	56	0'764	+5	26	+16	42
11	9 18 21	+2	5	74	12, 4	4	30	36	9'191 ^m	14	44	23	0'772	+5	27	+17	43
15	11 48 38	+1	16	79	15, 5	4	26	34	8'965	14	57	46	0'764	+5	30	+17	44

Mean Places of Comparison Stars.

No.	R.A. 1896 ^o .	Decl. 1896 ^o .	Authority.
	h m s		
1	14 45 47.76	+ 53 56 22.1	A.G.Z., Cambr.
2	20 19 58.61	+ 23 42 58.5	A.G.Z., Berlin B.
3	20 18 42.97	+ 22 53 56.1	"
4	20 13 12.61	+ 20 47 17.6	"
5	20 12 48.42	+ 20 37 40.0	"
6	20 6 47.91	+ 16 50 34.5	A.G.Z., Berlin A.
7	20 2 22.17	+ 14 58 0.9	$\frac{1}{2}$ (Bessel + Lamont).
8	20 4 15.66	+ 15 1 28.6	A.G.Z., Berlin A.
9	20 0 36.58	+ 13 43 19.9	Lamont.
10	19 53 33.08	+ 7 14 5.8	$\frac{1}{2}$ (Bessel + Lamont).
11	19 55 9	+ 7 15	B.D. + 7° 4330.
12	19 54 54.37	+ 6 39 29.4	Lamont.
13	19 50 38.10	+ 1 45 57.0	A.G.Z., Albany.
14	19 48 39.31	+ 0 55 30.6	Bessel — Weisse.
15	19 48 5.03	— 2 59 1.4	"
16	19 50 5.55	— 3 0 1.7	München.
17	1 12 11.00	+ 5 20 11.7	$\frac{1}{2}$ (Schj. + A.G.Z., Alb.)
18	2 22 37.84	+ 1 29 40.9	A.G.Z., Albany.
19	2 27 37.39	+ 1 12 19.8	"
20	20 24 56.66	— 6 51 8.8	Lamont.
21	23 52 26.61	— 7 57 14.8	Bessel — Weisse.
22	23 43 25.13	— 8 43 27.5	"
23	23 39 20.97	— 9 2 25.9	"
24	0 58 37.16	— 9 41 14.2	Schjell.
25	0 42 35.69	— 11 28 22.1	"
26	0 34 29.08	— 11 43 2.2	$\frac{1}{2}$ (Armagh + Bruxelles).
27	0 35 31.83	— 11 56 19.7	Bessel — Weisse.
28	0 21 17.12	— 0 37 32.6	Göttingen ₁ .
29	0 9 33.90	— 1 36 45.2	"
30	23 59 41.50	+ 9 48 46.2	$\frac{1}{2}$ (Bessel + Rümck.).
31	23 54 0.97	+ 7 56 17.9	Bonn Beob.
32	1 53 6.55	+ 16 31 15.4	A.G.Z., Berlin A.
33	1 42 16.98	+ 14 4 50.1	Bessel — Weisse.
34	1 44 29.84	+ 13 49 47.4	Lalande.
35	1 42 20	+ 13 18	B.D. + 13° 276.
36	2 38 58.88	+ 22 55 42.4	A.G.Z., Berlin B.
37	3 0 17.06	+ 23 52 7.1	"

No.	R.A. 1896'o.			Decl 1896'o.	Authority.
	h	m	s		
38	2	52	33'60	+ 23 42 59'2	A.G.Z., Berlin B.
39	2	36	34'06	+ 16 30 54'0	A.G.Z., Berlin A.
40	5	53	33'58	+ 31 55 59'2	$\frac{1}{2}$ (Bessel + Bruxelles).
41	4	40	40'80	+ 14 20 29'6	Bessel — Weisse.
42	4	35	33'09	+ 14 37 14'2	"
43	4	28	25'01	+ 14 45 24'6	"
44	4	25	12'85	+ 14 52 52'0	$\frac{1}{2}$ (Arm. + Bruxelles).

Notes.

- Sept. 14.—Comet exceedingly faint.
 Nov. 4.—(195). Observation interrupted by clouds.
 Nov. 4.—Comet exceedingly faint, scarcely visible.
 Nov. 13.—During the observation of the comet a strong wind shook the instrument. The comet resembles a faint nebula with a distinct nucleus of about 13th magnitude.
 Nov. 16.—Comet very faint; fog and moonlight.
 Nov. 18.—Comet well seen, though faint.
 Dec. 13.—Comet very faint. Hazy sky and moonlight.
 Dec. 22.—Comet faint.
 Dec. 23.—*Perrine*, Nov. 2, is a very distinct round nebulosity.
 Dec. 23.—*Perrine*, Dec. 8, has an oval form and nucleus of 11th magnitude.

*Transit Circle Observations of Comet Swift (1896 April 13)
 at the Radcliffe Observatory, Oxford.*

(Communicated by E. J. Stone, Esq., M.A., F.R.S., Radcliffe Observer.)

The following comet observations, excepting May 2, were made with illuminated wires. A power of 80 was used on each night :—

Greenwich Mean Solar Time of Transit (sub polo).				Observer.	Apparent R.A. of Comet.			Apparent N.P.D. of Comet (Uncorrected for Parallax).	Parallax q.	Log (q × Δ).
1896.	h	m	s		h	m	s			
Apr. 30	12	27	57'6	W.	3	0	40'03	37 55 18'5	13'8	0'9327
May 1	12	18	53'5	W.	2	55	30'99	36 11 3'0	13'4	0'9293
	2	12	9 31'6	R.	2	50	3'95	34 33 57'1	13'1	0'9257
	4	11	50 3'7	W.	2	38	26'09	31 38 46'9	12'4	0'9183
	11	10	36 20'2	W.	1	52	6'40	24 27 50'6	10'4	0'8946
	13	10	14 20'7	R.	1	37	56'36	23 5 6'9	9'9	0'8891
	14	10	3 16'7	W.	1	30	47'16	22 28 27'9	9'7	0'8865